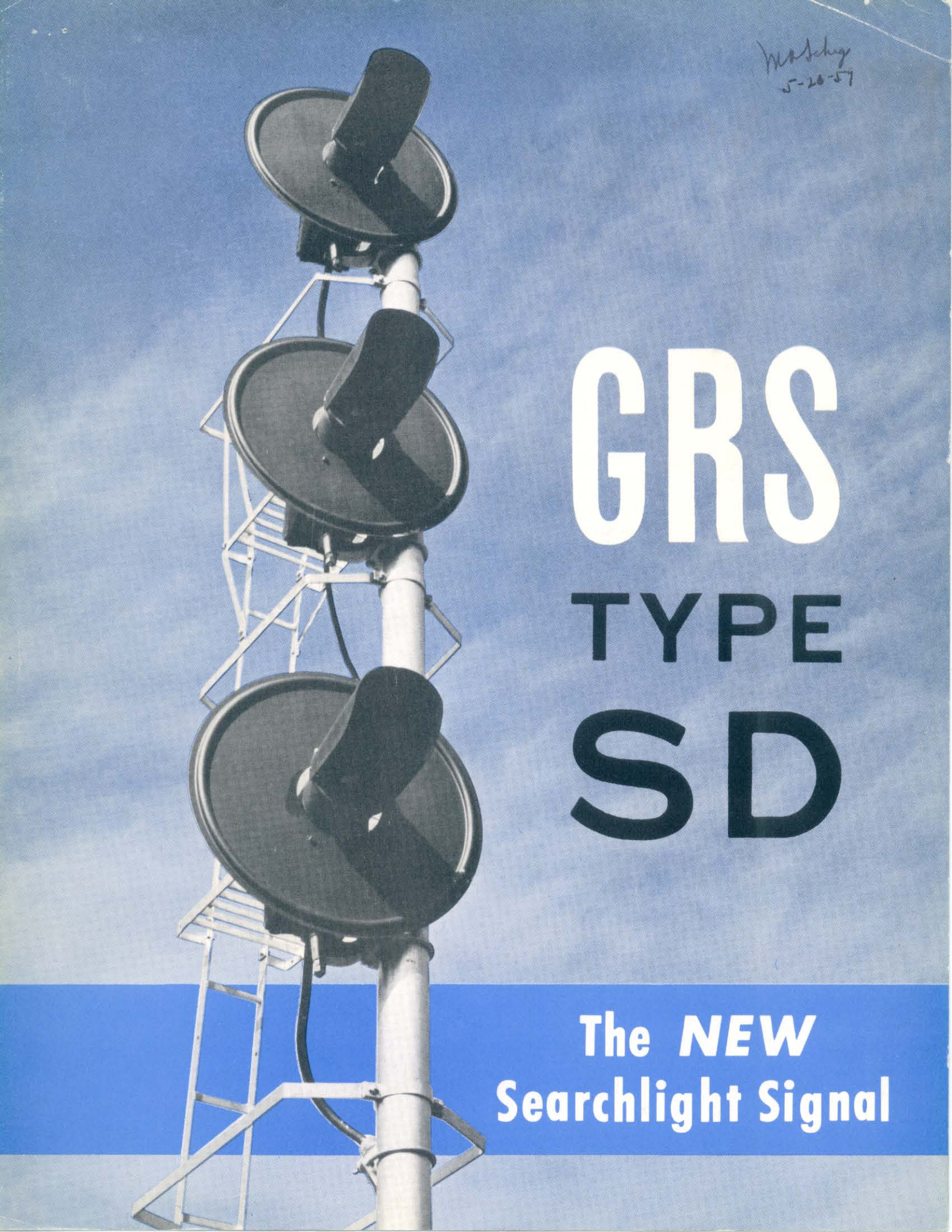

GRS
TYPE
SD
The NEW
Searchlight Signal

GRS Type SD Searchlight Signal

The new Type SD signal combines the outstanding advantages of Types SA and SC searchlight signals. It projects three color aspects through a single lens system, using a new color-changing mechanism that is simple, rugged, and positive. It gives you the sturdy simplicity of a tractive-armature movement, together with the dependability of biased-neutral operation—all in a signal the same physical size and weight as the well-known GRS Type SA.

The Type SD signal meets all A.A.R. specifications for color-light signals of the searchlight type. Range with a five-watt lamp and compound lens system exceeds 5000 feet, with the sun at or near the zenith. At locations where extreme range is not required, the Type SD signal is available with a Fresnel (stepped) lens optical system.

Deflecting and Spredlite roundels may be added to adapt the light pattern to varying conditions of layout imposed by terrain, track curvature, and height of signal. Snow hoods are also available to protect against obstruction of the signal aspect by clinging snow.

TRACTIVE-ARMATURE MOVEMENT

The spectacle, which carries the beam-coloring discs, is positioned by a completely new mechanism. It has two tractive armatures, like those used in relays. The aspect-checking contacts of the signal are operated directly by these armatures.

BIASED-NEUTRAL OPERATION

There are two identical tractive-armature movements in the Type SD signal. The magnetic structures of these movements operate on exactly the same principle as the service-proven GRS biased-neutral relay and provide an equivalent level of reliability.

INTERCHANGEABLE WITH TYPE SA

The Type SD mechanism uses the same circuits and lenses as the SA. It is directly interchangeable with the current design of SA mechanisms, and with older SA mechanisms after simple plug coupler changes. The SD fits housings for the SA signal. Early SA housings may need minor field modification.

RUGGED CONSTRUCTION

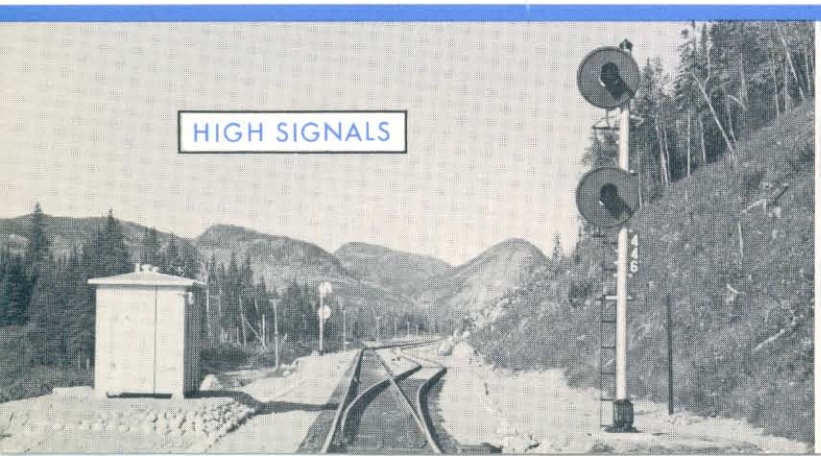
The mechanism of the Type SD, which includes the tractive-armature movements, coils, cores, armatures, spectacle arm, and contacts, is built upon a forged silicon-steel yoke plate. This new, rugged design gives long life and reduces the need for maintenance. The complete mechanism floats on shock absorbing springs, which makes the Type SD signal particularly suitable for use in areas subject to heavy vibration.

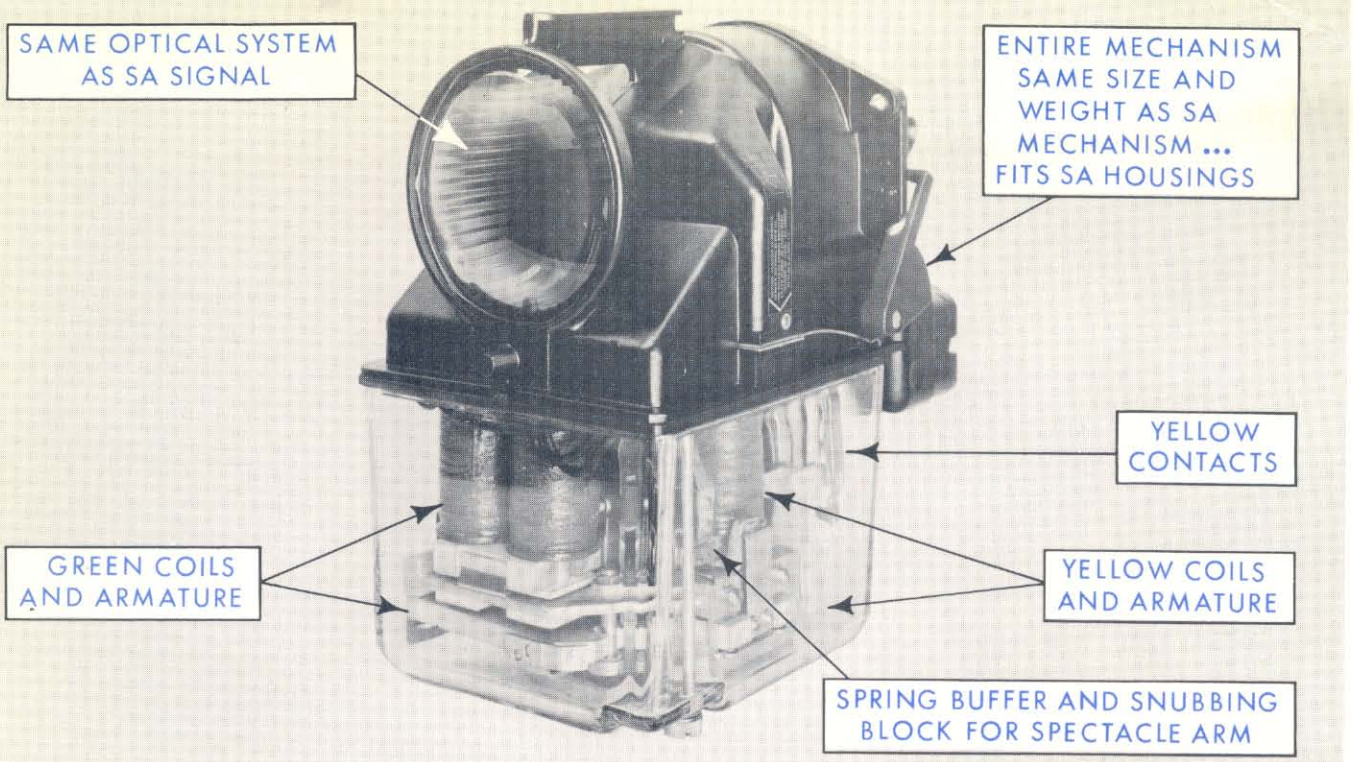
An air-gap lightning arrester is built into the plug coupler. It is shunted from the coil wires to the case and will bypass all voltages above 2000. The operating coils, which are insulated to withstand 5000 volts to ground, are thus effectively protected against lightning damage.

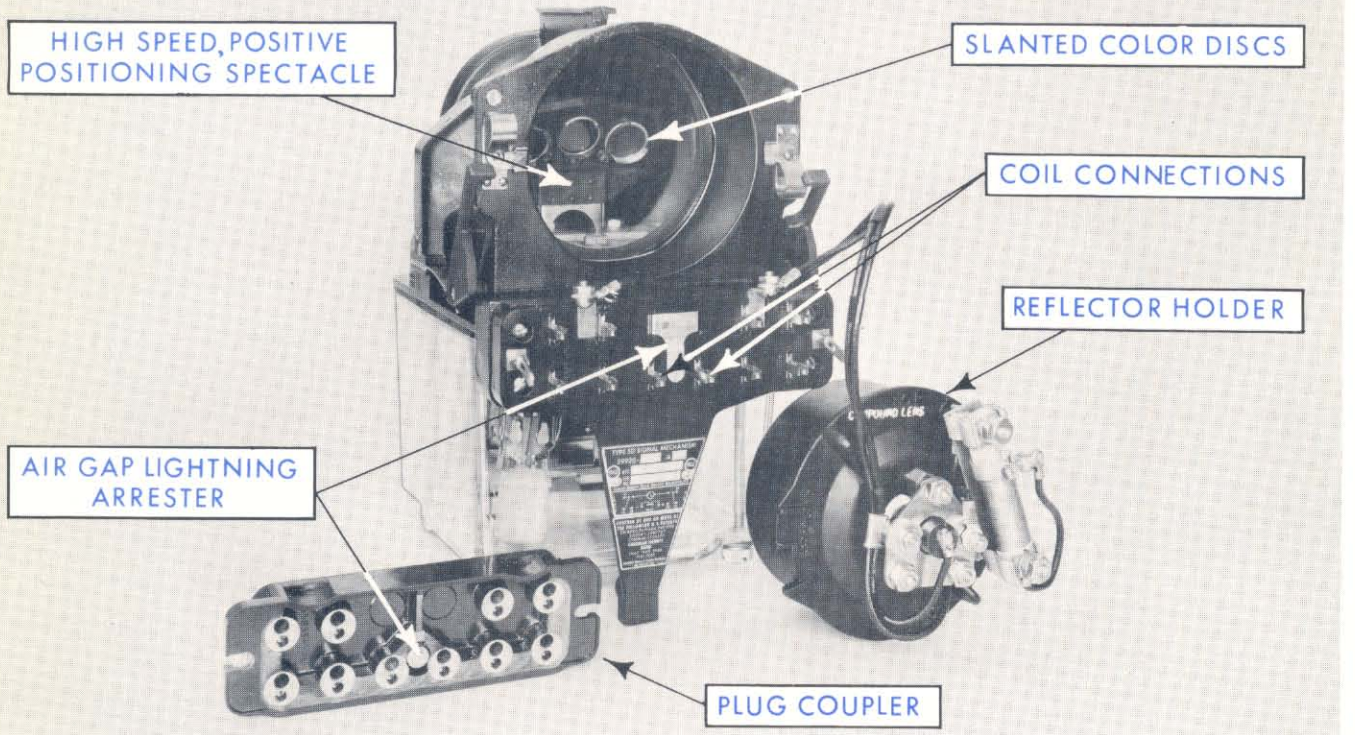
POSITIVE INDICATIONS

The Type SD signal mechanism provides high-speed change of signal aspects, without overrun or rebound. An inertia-triggered damping device produces deadbeat operation of the spectacle arm. This prevents the momentary display of an unwanted aspect when operating the Type SD signal from either of the "proceed" aspects to the "stop" aspect.

All beam-coloring discs are held in a slanted plane within the mechanism. This guards against dilution of the signal beam by the reflection of external light from the polished surfaces of the discs.



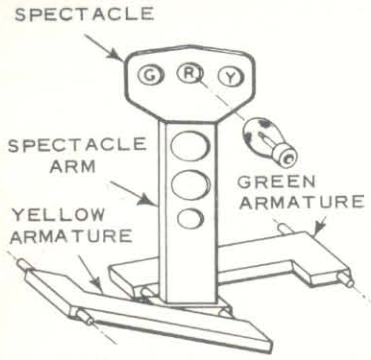

SAME OPTICAL SYSTEM AS SA SIGNAL
ENTIRE MECHANISM SAME SIZE AND WEIGHT AS SA MECHANISM ... FITS SA HOUSINGS
YELLOW CONTACTS
GREEN COILS AND ARMATURE
YELLOW COILS AND ARMATURE
SPRING BUFFER AND SNUBBING BLOCK FOR SPECTACLE ARM


HIGH SPEED, POSITIVE POSITIONING SPECTACLE
SLANTED COLOR DISCS
COIL CONNECTIONS
REFLECTOR HOLDER
AIR GAP LIGHTNING ARRESTER
PLUG COUPLER

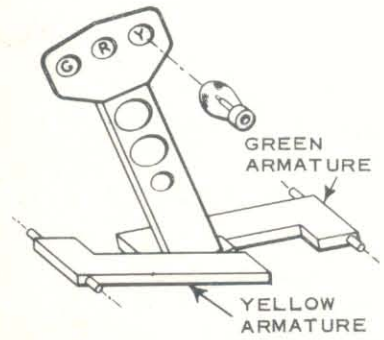
CANTILEVER SIGNALS

DWARF SIGNALS

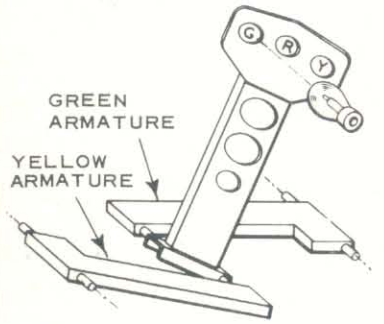
PRINCIPLE OF TRACTIVE-ARMATURE SPECTACLE DRIVE



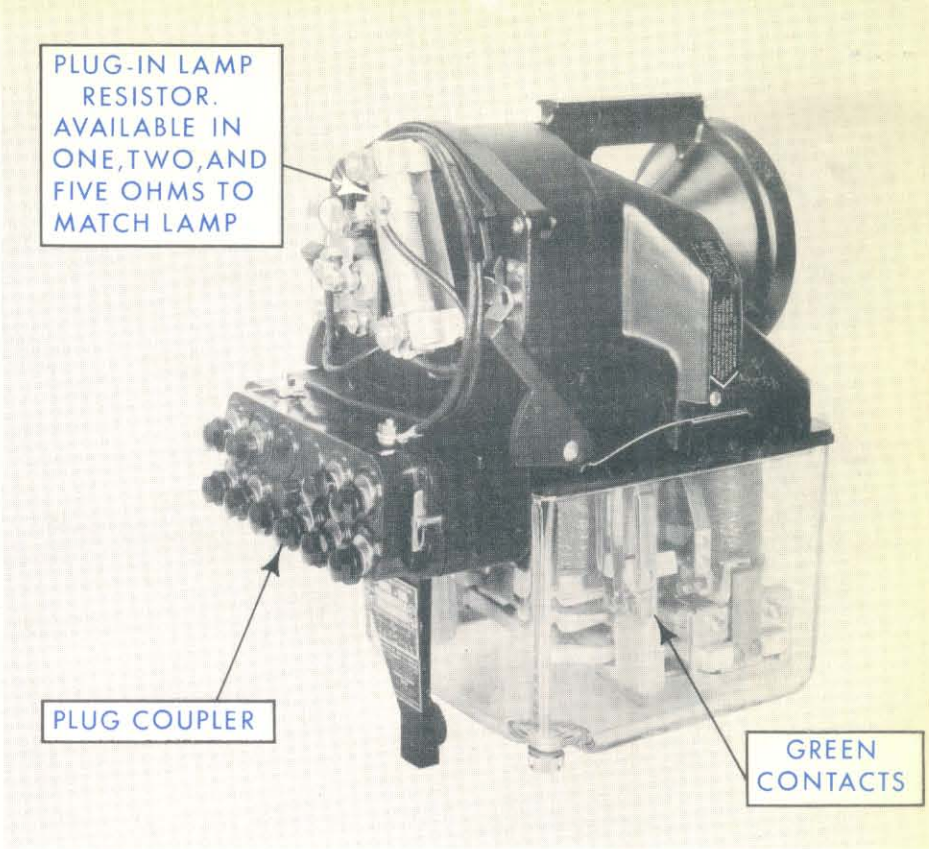
BOTH ARMATURES DOWN. SPECTACLE ARM POSITIONS RED COLOR DISC IN CENTER OF LIGHT BEAM.



YELLOW ARMATURE PICKED UP. GREEN ARMATURE DOWN. SPECTACLE ARM POSITIONS YELLOW COLOR DISC IN CENTER OF LIGHT BEAM.



GREEN ARMATURE PICKED UP. YELLOW ARMATURE DOWN. SPECTACLE ARM POSITIONS GREEN COLOR DISC IN CENTER OF LIGHT BEAM.



FEATURES OF THE TYPE SD SIGNAL

- Simple, time-proven tractive-armature drive.
- Dual tractive-armature structure—two independent armatures, each operating its own set of contacts.
- Aspect-checking contacts directly operated by tractive armatures.
- Service-proven, shunt-protected, biased-neutral operation.
- Positive spectacle positioning and color indication.
- Built-in resilient mounting of signal movement.
- All color discs slanted to minimize beam dilution.
- Choice of compound lens or stepped lens optical system.
- Choice of deflecting or Spredlite roundel. Phankill unit available.
- Precision filament lamps—no refocusing needed.
- Plug-in lamp resistor; one, two, or five ohms.
- Plug-coupled connections.
- Built-in sighting fixture, screened vents, easy-latch door, ample wiring space.
- Mechanically, electrically, and optically interchangeable with Type SA signal. Same size and weight, with improved operating values. Same outer housing.

For complete information on the GRS Type SD searchlight signal, contact your GRS sales office.

GENERAL RAILWAY SIGNAL COMPANY

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